if we fail to control the problem, but the active work being done warrants our statement that both ourselves and the United States are being protected. However, many people believe that we are not able to control it, and are suppressing the information with reference to the disease. That reflects upon us as citizens and upon the Federal service, which has done such valuable work for us. As physicians we should all see to it that we, as centers of scientific information, make these points clear to our fellow citizens, so that they may in turn make the points clear to their friends in the East.

Dr. L. M. Powers, Los Angeles: We have had some experience in Los Angeles County with the squirrel question. At first we were very much puzzled as to why these cases were appearing in that section, but upon investigating the country, we followed up the railroad to where it brought in and unloaded the freight cars, and have found that as these cars were brought down and switched off, they were cleaned and all the refuse swept out and the squirrels were attracted to that district. One of our cases was that of a young boy who, when trying to catch one of these squirrels, was bitten and five days later developed a high temperature and enlarged glands. We examined the case without knowing the nature of the disease, but finally became suspicious and went out and hunted up the squirrel which we found dead near the place where it had bitten the boy. This was examined and pronounced as plague and the diagnosis was verified by Dr. McCoy. We were much puzzled as to how the infection reached Los Angeles and how it could have skipped the country between Contra Costa County and Los Angeles, but we finally decided that its source was from the cars which had been swept out at that point, and that the squirrels had become infected and had then gone into the hills to live. We set out to destroy the squirrels and since then have had no more cases, either of human or squirrel plague. But the question comes up as to what to do next and where the cases originate, and whether it can be that it is started by co-mingling with rats. We have found that rats do not exist where squirrels are, but since the destruction of the squirrels, we have found that rats are becoming numerous.

Dr. R. G. Brodrick, San Francisco: I wish to congratulate Dr. McCoy upon the paper he has read and to lay emphasis on one point that has been overlooked on account of the shortness of time given for the reading of papers. That is the protection that cities might take against importation of the squirrel infected with plague. This matter was taken up in 1909 between Surgeon Blue and the Board of Health and an ordinance was passed making it prohibitive for any one to bring into the City and County of San Francisco squirrels from neighboring counties. The ordinance was directed chiefly against men and boys who on holidays and Sundays went into Contra Costa County to shoot squirrels for human consumption in the North Beach district of San Francisco. Dr. Rucker laid stress particularly upon the importance of this phase of the question, that is, of squirrels being infested with fleas which might spread the infection. Placards were put up in ferry boats, trains and hotels, written in Spanish, Portuguese, Italian and French, as well as English, and I believe that through the activities of the Harbor police this custom has been abolished.

Dr. Stanley P. Black, Pasadena: I think the health officer can help in this question, by endeavoring as far as possible to keep his district free from squirrels. It is a big work and in Pasadena I have kept up the fight each year. The man whom I have employed to poison the squirrels has reported to me that the city is practically free from squirrels except in the outlying districts, where the holes which have been emptied of squirrels, are later occupied by squirrels which emigrate across the city limits. We will soon eradicate the squirrel from the state of California if we keep on with this work.

ARTIFICIAL CULTIVATION OF THE LEPRA BACILLUS IN HAWAII.

By HARRY E. ALDERSON, M. D., San Francisco.

The writer, on his last visit in Honolulu (July, 1910), had the privilege of seeing living cultures of the lepra bacillus (in the tenth subculture) at the Kalihi Receiving Station laboratories. For some months Brinckerhoff, Currie and Holman (all of the U. S. P. H. and M. H. Service) have been endeavoring to confirm Clegg's work and after having inoculated hundreds of tubes with leprous material, finally succeeded in growing the organism so that they were able to transplant it and carry it on to the tenth subculture. They have been able to greatly improve on Clegg's technic and have learned many new details which seem to be essential to success. They have successfully grown the bacillus four times from three cases of leprosy and have finally isolated it in pure culture. This was accomplished by first growing the organism in symbiosis with the cholera spirillum and the ameba (the latter obtained from the intestine of a guinea pig). The improved technic will be fully described in an article soon to be published by Donald Currie.

There were many interesting observations made during the course of this work, some of which are as follows: Success was met with only when the material was obtained from rather early untreated cases. Failures resulted when inoculations were made from late cases, or early cases that had been given Chaulmoogra oil for some time. This point will be worked out more fully by Currie. It was found that the serum from recently deposited nonulcerated nodules offered the best chance for success. The formula of the medium used was as follows: Salt 0.3, Agar 20.0, Water 1000.00, cleared with egg albumen. For growing the ameba, beef extract (0.3) was added to this formula. The ameba and the cholera organisms were first grown separately (the former as already indicated and the latter on glycerin-agar). Then the leprous material, cholera and ameba cultures were planted on a Petrie dish (after the manner to be described in detail in Currie's article), and after a certain stage had been reached this mixed culture was transferred to tubes. Lack of space will not permit a full account of the details here. It was found that the cholera spirillum became quite virulent when grown in this way. Bacillus coli, and bacillus typhi murium were tried as substitutes for the cholera organism, but without success. The culture tubes must have an abundance of water of condensation and it is best not to disturb them any more than necessary. Clegg recommended examination of the tubes on about the tenth day for the purpose of determining whether multiplication had occurred. Brinckerhoff, Currie and Holman did this in the early part of their work, but they soon concluded that the failures were largely due to disturbing the tubes. Now they do not examine a culture during the first three weeks of its growth. After transplanting the mixed culture three or four times, it is subjected to a temperature of 60° C. for three minutes. This kills off the amebae and the cholera organisms, but does not affect the lepra bacilli, which latter can then be transplanted and readily grown in pure culture.

Multiplication of the lepra bacillus is indicated by a change in its morphology. In the young cultures it appears as a short, plump, acid-fast organism occurring in chains ("an acid-fast strepto-cocco-bacillus"—Currie). Later it tends to return to the form seen in tissue. Variations from these forms occur, however.

All of this work has been well controlled throughout and some very interesting results of animal inoculations will be published soon.

The laboratories at the Kalihi Receiving Station (Honolulu) and at Molokai are completely equipped and there is a great abundance of material available. At the former place the government is building new hospitals for experimental treatment. Arrangements have been made for animal experimentation on a large scale and interesting results are to be looked for in the near future. The preparation of an emulsion of the lepra bacilli for "vaccine treatment" will be the next step in this great work, and some of those so fortunate as to be engaged in it have expressed the opinion that in a few years "we shall be as far advanced in the successful treatment of leprosy as we are now in the care of tuberculosis."

A CASE OF HERNIA IN A CHILD.

By THOMAS GARFIELD DODDS, M. D., Oakland.

Name, Harry K., age 4 years. Well developed and well nourished; full term child; bottle fed. Mother states that child was "born ruptured." Since birth has had attacks of inability to retain urine. Child exceedingly cross and irritable at all times. At times attacks of vomiting and febrile temperature were noted. At such times child complained of severe abdominal pain. Family physician examined child and referred parents to an instrument maker who applied a spring truss. Mother states that truss has always seemed to hurt the child. Since first wearing truss, which was begun at the age of two years, child has been periodically afflicted with spasms. Complained at intervals of a great deal of pain in scrotum and right inguinal region.

Examined 6/25/10. Physically an apparently normal child except noted absence of right testicle. Oblique inguinal hernia present. Marked sense of resistance noted in lower right quadrant of abdomen. Pressure over McBurneys' appendiceal point showed slight tenderness. About one inch lower down a decidedly tender point was found.

Diagnosis—Undescended right testicle. Oblique inguinal hernia on right side, and probably a condition of chronic catarrhal appendicitis. Operation advised.

Date of operation, 7/2/10. Oblique incision on right side down to sac. Sac opened. In sac appendix found coiled upon itself and adherent to walls of sac. When uncoiled appendix measured 5 2-3 inches in length. Appendix removed through opening in neck of sac. Fine silk purse string method used. Undescended testicle found in sac just above appendix. Impossible to draw testicle down into scrotum. Testicle about 1/3 size of left testicle. Removal of testicle. Typical Bassini operation completed on R. side.

Post-operative History.—Appendix opened after removal; found to be catarrhal in type. Child left hospital in two weeks. Has since gained in weight; has become less cross and irritable; has had no recurrence of spasms or pain, and no further incontinence of urine.

Conclusions.—All cases presenting themselves wherein an absence of the testicle is noted along with a condition of hernia, are not well adapted to the wearing of a truss. It is always advisable that the physician himself should fit the truss, should the advisability of wearing such be determined upon. It is unwise to cause the pressure of a truss to be brought to bear upon a testicle that may be caught in the inguinal canal.

In two and one-tenth per cent. of all children who are born ruptured, the appendix will be found in the sac. A ruptured child having a history of repeated attacks of spasms may in reality be suffering from repeated attacks of appendicitis.

ACUTE LYMPHATIC LEUKEMIA: REPORT OF A CASE.

By JOS. M. KING, M. D., Los Angeles.

The following case occurring in the practice of Dr. C. A. Jenks is deemed worthy of report on account of the very high leukocyte count, high percentage of leukocytes in a lymphatic case, the size of the lymphocytes, and the autopsy findings.

H. N., aged 20, single, born in Connecticut of Norwegian parentage, electrician by occupation, called a physician on July 16th, complaining of weakness, fever, and tenderness in the splenic region.

He had two brothers and three sisters, all living and in excellent health, as were also his father and mother, and his maternal grandparents. His paternal grandparents lived to old age. He lived in Connecticut until four, when the family moved to Los Angeles, where he had since resided. Until fifteen he had attended school, then for two years worked in a rubber stamp factory, and the last three years of his life he did inside electrical wiring. He did not drink or smoke, led a temperate life, and gave no history of venereal infection. Of the diseases of childhood he had measles, mumps, and chickenpox, and at ten was confined to bed for a week and to the house for three weeks with what was said to be "typhoid pneumonia." He was fond of athletics, and did gymnasium work three times a week, but had no recollection of having received a fall or blow in the splenic region or elsewhere. He had not had malaria. In the latter part of April this patient noticed that he had slight digestive disturbances, with some weakness, vertigo, free perspiration, and on inquiry recalled that he also had slight pain in the splenic region. No fever or splenic enlargement were noticed by him, and he did not stop work or seek medical advice. This condition continued with intermissions until July 9th when, while at work in a neighboring town, he developed a slight nasal and bronchial "cold," with gastro-intestinal symptoms reappearing and increasing in intensity, so that he took to his bed, complaining of abdominal cramps, constipation, headache and fever. On July 13th he returned home, and for the next three days spent part of the time in bed and part about the house, depending on the severity of the gastro-intestinal symptoms. On July 16th a physician was called, who noted the enlarged spleen but made no diagnosis. He put the patient to bed on a restricted diet. and administered quinin and salin laxatives, resulting in copious dark stools, probably hemorrhagic.

On July 19th the young man came under the observation of Dr. Jenks and myself, at which time he was in bed complaining of a little frontal headache but no other pain, slight blurring of vision, hearing impaired, and of great weakness, although he was going some distance to the toilet. He also had some cough with the expectoration of scanty sputum mucoid in character, occasionally slightly blood tinged, and which on subsequent examination did not contain tubercle bacilli. He was drinking considerable water, perspiring very freely, and felt hungry and asked for a more liberal diet.

Examination revealed a well developed young man 5 ft. 9 in. tall, weighing about 140 lbs. The tongue was heavily coated, but no leukemic infiltrations were noted in the mouth or throat. With the exception of a few mucous rales heard in the left infra clavicular region, no abnormality of the lungs was found. The